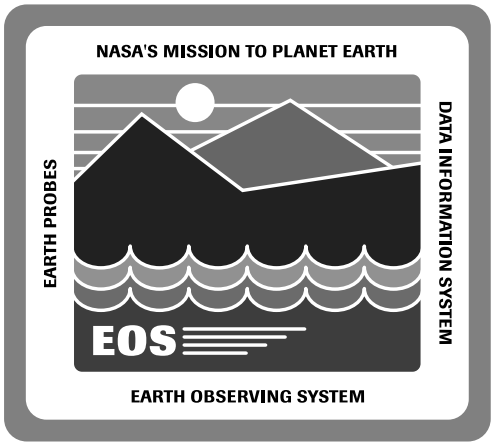
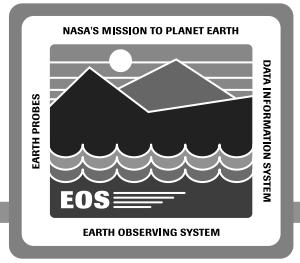


CSMS PDR Summary

DesJardins / Medin / Armstrong

28 February 1995

CSMS Mission

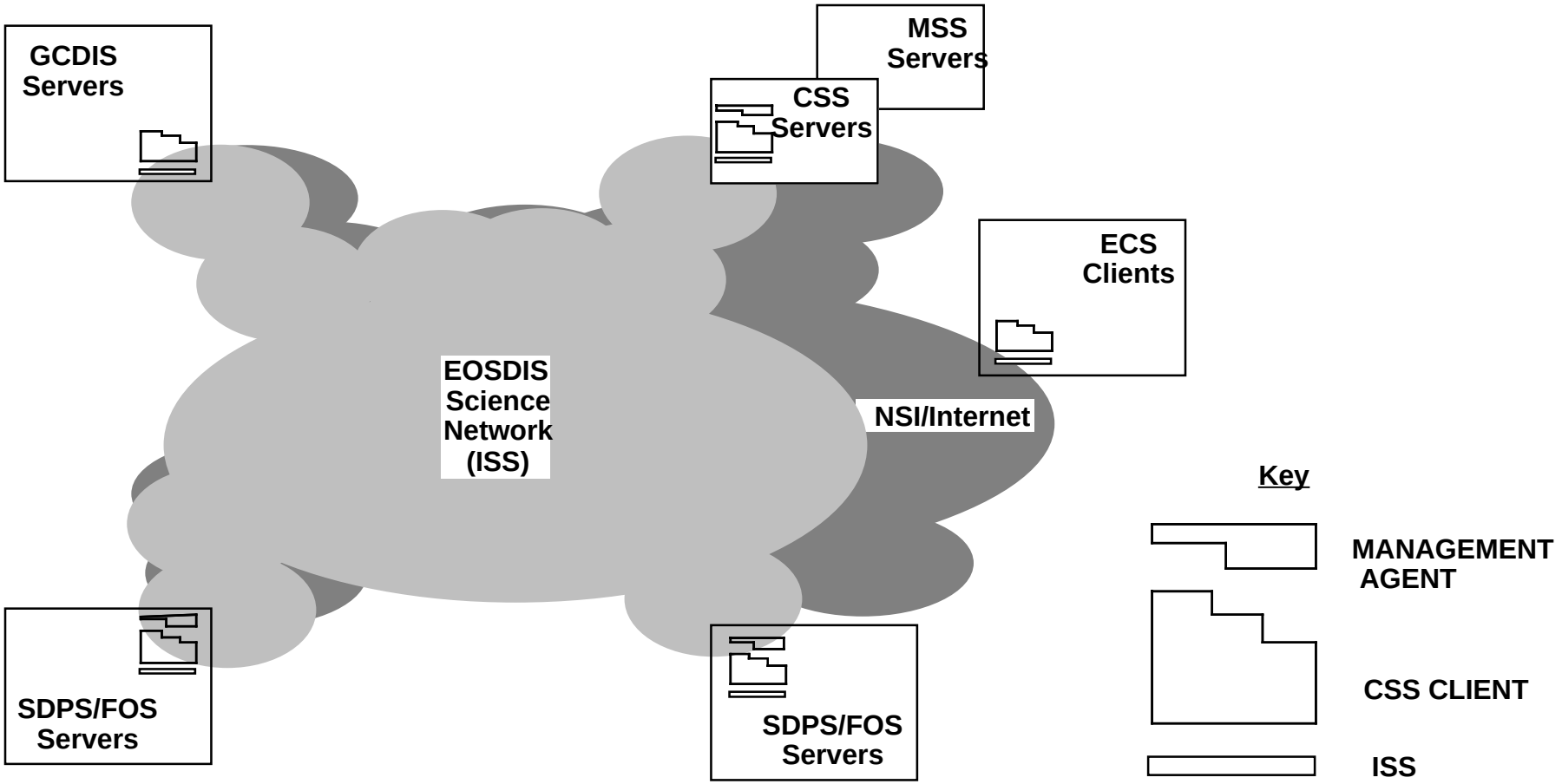


CSMS is the infrastructure that interconnects and manages ECS. To accomplish its mission, CSMS:

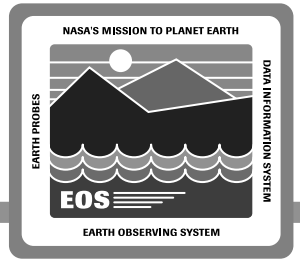
- **Provides network connectivity/interfaces**
  - **between users, DAACs, EOC, EDOS, SCFs, ADCs, EPDSs, IPs**
  - **within DAACs and EOC**
- **Provides interoperability between services of FOS, SDPS, and (CSMS's own) management functions in a manner which maximizes flexibility to relocate and evolve those services**
- **Provides management tools for the efficient and effective operation of DAACs, EOC, ESN, and interfaces with other EOSDIS components**

These three core requirements map cleanly into three CSMS subsystems

CSMS Context



CSMS PDR Review Board Members



Bill Mack, GSFC Systems Review Office, Chair

Milo Medin, ARC NSI/EOSDIS External Network Manager, Co-chair

Lyn Oleson, EDC DAAC Manager

Cathy LaPenta, MSFC DAAC Manager

Dr. Bill Emery, U Colorado, NSUN representative

Art Gaylord, U Massachusetts, Director, Project Pilgrim (DCE)

Greg Hunolt, ESDIS DAAC Systems Manager

Ernie Lucier, HQ MTPE Communications Manager

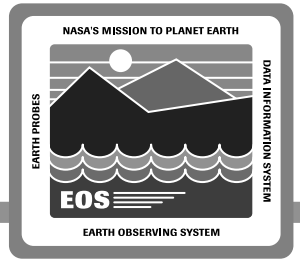
Dave Peters, GSFC V0/EOSDIS Internal Network Manager

Mike Moore, ESDIS SDPS representative

Mike Rackley, ESDIS FOS representative

Vishal Desai, Ecom Systems Engineer

CSMS PDR Review Board Findings



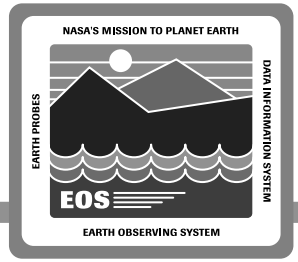
- PDR was successful, no showstoppers
- Board was impressed with significant progress since SDR on
  - COTS orientation
  - evolvability
- Technical depth of review was reflected in
  - HAIS design presented
  - Review Board representatives, detailed discussions
  - Types and scope of RIDs received
- Board had concerns on
  - how CSMS design will be used by other segments
  - operational issues, interactions with other segments, DAACs
  - variety of technical issues which are straightforward to address
- Overall: excellent review, HAIS is on the right track, some system issues for project remain

RID Summary

- **Priority 1 RIDs**
  - **55 RIDs in 24 categories**
  - **48 allocated to ECS**
  - **7 allocated to Project**

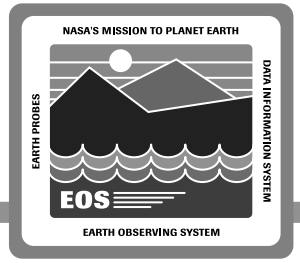
- **Priority 2: 93 RIDs**
  - **90 allocated to ECS**
  - **3 allocated to Project**

Key Issues



- **Scheduling**
- **Operations concept**
- **Multicast availability for FOS CDR**
- **Developer documentation and training for CSS services**
- **Road to CDR**

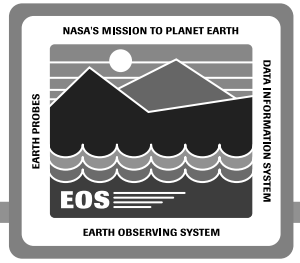
Other Priority Issues



- **Use of subsetting to reduce network costs**
- **RMA****
- **V0 and Release A**
- **True cost of COTS**
- **Remote file mounting**
- **Interprocess communications**
- **DOF and client-server**
- **System time-sync**
- **Bulk data transfer restart**
- **Multiplicity of communication methods**
- **OODCE to CORBA**

** ***Categories marked with asterisks contain some RIDs assigned to Project***

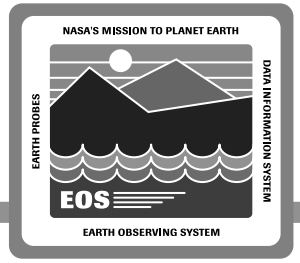
Other Priority Issues (cont.)



- **"Ghostbusters" ****
- **DAAC ops 24 x 7**
- **Trouble ticketing**
- **Design traceability**
- **Monitoring of distributed applications**
- **Configuration management of customized "code"**
- **Sizing models**
- **Billing and accounting ****

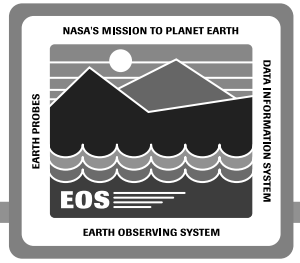
** ***Categories marked with asterisks contain some RIDs assigned to Project***

CSMS Mega-Issues Response Summary



- **Release A scheduling; coordination with SDPS and FOS**
- **Operations concept definition; coordination with M&O**
- **Multicast availability for FOS CDR**
- **Developer documentation and training for CSS services**
- **Road to CDR**

Scheduling



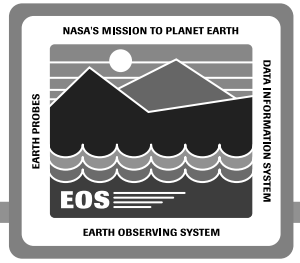
Issue:

- **Use of office automation (OA) tools for resource scheduling for Release A may not adequately address scheduling requirements**
- **Coordination of scheduling between CSMS and SDPS/FOS is not clear**

Response:

- **OA tools will not be the sole mechanism for implementation of CSMS Release A scheduling functionality**
- **A combined (CSMS/SDPS) scheduling concept was briefed at the SDPS PDR**
  - **CSMS ground events result in a "resource availability schedule"**
  - **Resource availability schedule is used by SDPS for production scheduling**
  - **Both scheduling views share a common database**

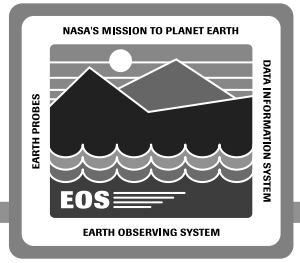
Scheduling (cont.)



Response (cont.):

- **CSMS' reuse of SDPS' scheduling capability means that we will**
  - **coordinate with SDPS in evaluation of COTS scheduling products**
  - **map SDPS functions to CSMS scheduling requirements**
- **CSMS will provide FOS with a resource availability schedule as well**
- **Detailed interface between CSMS schedule and FOS functions will be worked for FOS CDR**

Ops Concept Definition



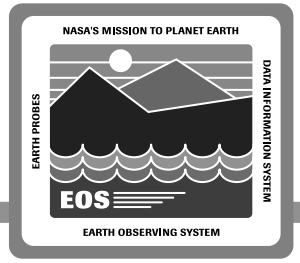
Issue:

- **CSMS PDR was from a developer's perspective only; emphasis must be on how services are used (e.g., in "a day in the life" scenarios)**
- **More involvement is needed by local and remote M&O staff, HAIS system staff, and external organizations so that developed system meets the needs of various user classes**

Response:

- **CSMS supported M&O ops concept briefing and SDPS scheduling briefing at SDPS PDR**
- **Proposed "Road to CDR" schedule includes early ops concept review, which will feed CDR design**
- **CSMS DAAC contact will increase**
  - **MSS will visit all Release A DAACs**
  - **ISS (networks) telecons with DAACs to follow-up 1994 site visits and work CDR design issues**

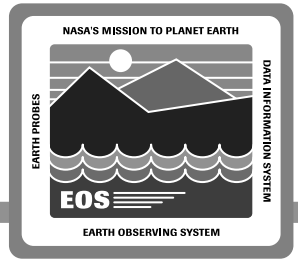
Ops Concept Definition (cont.)



Response (cont.)

- **Visits / coordination with NSI, Ecom planned to learn from existing implementations, resolve interfaces**
- **Release teams will feature M&O representatives within the development organizations**

Multicast Availability



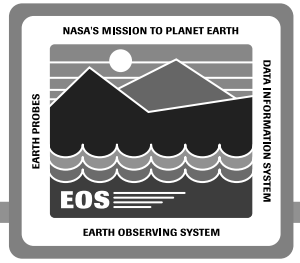
Issue:

- **Will CSMS provide multicast in time for FOS needs?**

Response:

- **Yes. CSMS will provide an API to FOS in April, along with appropriate documentation. CSMS will provide working code in late 1995 for FOS Build A.**
- **CSMS is evaluating two COTS implementations of IP multicast**
  - **ISIS - a commercial (proprietary) development toolkit that uses network layer multicast protocols**
  - **RMP - UC Berkeley /WVU multicast application interface being submitted for standardization via RFC process; uses network layer multicast protocols**
- **FOS' priority is on multicast within the EOC, to save processor load. Multicast to ISTs is desirable but can be resolved later, since its impact on processor load is much less.**
- **CSMS will continue to investigate multicast to ISTs, including associated routing and security issues.**

CSS Programming Guidelines



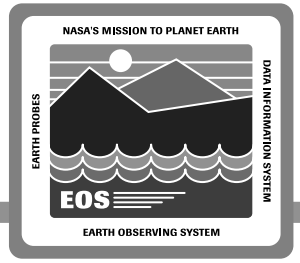
Issue:

- **Programming guidelines and training are needed to help developers understand how to appropriately use CSS services.**
- **Guidelines should address use of standards to help portability, use of threads, error handling, selection of client/server communications methods, and use of security.**

Response:

- **CSS will provide a set of ECS/CSS programming guidelines to assist application developers to create portable and reliable software that uses CSS provided services.**
- **Included in these guidelines will be information on how to use the CSS services, usage of CSS provided APIs and OODCE IDL construction, and examples of implementation.**
- **A first draft of this documentation will be available by the FOS CDR.**
- **Training sessions will be provided to FOS and SDPS developers in the form of workshops.**

Road to CDR Definition

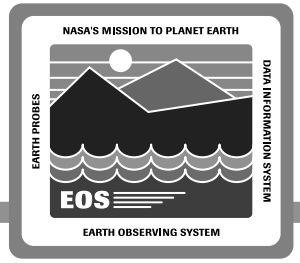


(This issue is being separately briefed in the PDR wrap-up.)

The "Road to CDR" response covers

- **Detailed design content**
  - **CDRL deliveries**
  - **Technical content definition**
- **Detailed design development description**
  - **COTS-related design**
  - **Custom code design**
  - **Prototypes needed for CDR design**
- **Detailed design review process**
  - **Early ops concept review**
  - **Segment schedules / coordination for CDR**

CSMS PDR Closeout



- **CSMS will issue PDR final versions of the following documentation by March 22:**
  - **DID 304, CSMS Requirements Specification**
  - **DID 305, CSMS Design Specification**
  - **DID 311, CSMS Database Design / Schema**
  - **DID 313, CSMS Inter-Segment ICD**
  - **DID 319, CSMS Integration and Test Plan**
  - **DID 307/329, CSMS Development Plan**
- **RID Closeout**
  - **Remaining Priority 1 RIDs will be provided to Project by 3/3**
  - **All Priority 2 RIDs are scheduled for ECS closure by 3/17**